CHAPTER VI

Reorganization and Growth in 1942

After the Japanese attack in December 1941, the Corps of Engineers was under extraordinary pressure to organize, equip, and train its citizen soldiers. Moreover, this was but part of the task faced after Pearl Harbor. On 16 December 1941, the Corps of Engineers took over from the Quartermaster Corps supervision of the eleven billion dollar military construction program. The transfer of this program presented another challenge just when engineer troop units began to multiply at a rate that made the "terrific" expansion of the previous months seem insignificant.[1]

The Wartime Task and Administrative Changes

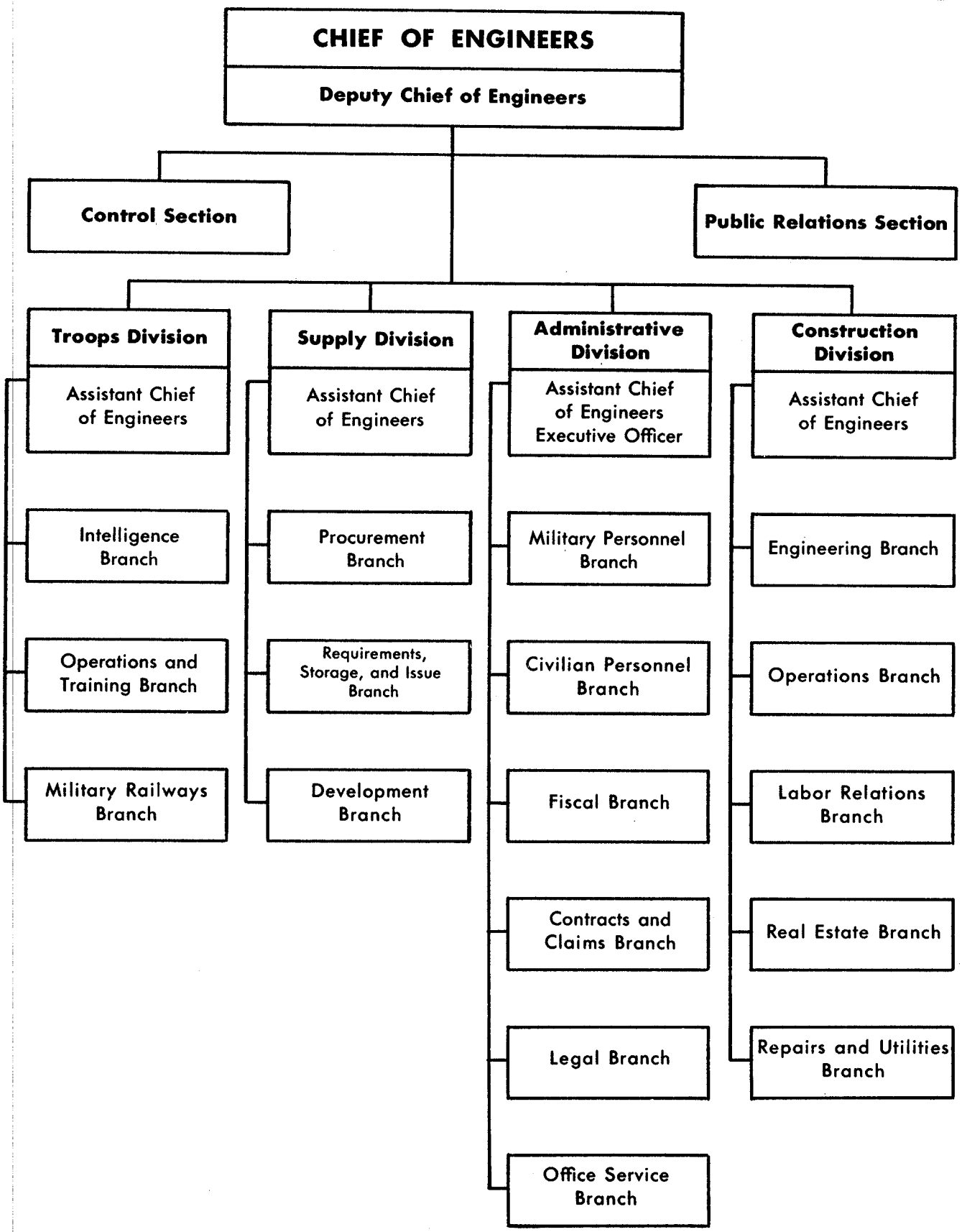
The transfer of military construction precipitated a reorganization in the Office of the Chief of Engineers which provided not only for the supervision of construction itself but also for more effective direction of the procurement of troop supplies. The appointment of Brig. Gen. Clarence L. Sturdevant as Assistant Chief of Engineers in charge of training in 1940 had brought the number of assistant chiefs to three. Under this arrangement General Kingman had supervised all other matters having to do with troops, including supply, and General Robins, all construction activities. The reorganization of December 1941 increased the number of assistant chiefs and changed their duties. (*Chart 2*) Brig. Gen. David McCoach, Jr., became Assistant Chief of Engineers in charge of the Administrative Division, in which were located the Civilian Personnel, Fiscal, Contracts and Claims, Legal, and Office Service Branches as well as the Military Personnel Branch formerly located in the Troops Division. Robins continued as Assistant Chief of Engineers in charge of the Construction Division, with the added duties accruing from the transfer. Sturdevant, as Assistant Chief in charge of the Troops Division, succeeded to Kingman's responsibilities for the Intelligence Branch and the Operations and Training Branch and through these branches for the Engineer Reproduction Plant, the Engineer School, and the replacement training centers at Fort Belvoir and Fort Leonard Wood. Unlike his predecessor, General Sturdevant had no control over military supply.[2] In the fall of 1941 Somervell had urged the appointment of an Assistant Chief of Engineers for Supply "so that he will have the opportunity through present procurement activities to become familiar with and be ready for the expanded supply activities which will come with a shooting war." [3] Although the Sup-

[1] For details about the transfer of military construction see Fine and Remington, The Corps of Engineers: Construction in the United States.

[2] (1) Orgn Charts OCE, 1940–42. EHD files. (2) OCE GO 8, 10 Nov 41.

[3] Draft of Memo, Somervell for CofEngrs, 8 Sep 41, sub: Consolidation—Constr Div OQMG With Corps of Engrs. Madigan files, Consolidation Bill—Collateral Data.

CHART 2—ORGANIZATION OF THE OFFICE OF THE CHIEF OF ENGINEERS: DECEMBER 1941



MAJ. GEN. EUGENE REYBOLD,
Chief of Engineers from October 1941 until October 1945.

ply Division was to purchase materials for military construction as well as equipment for troops, purchases for troops accounted for much the greater volume of its work. Brig. Gen. Raymond F. Fowler moved into the position of Assistant Chief of Engineers for Supply after having served for a brief period as chief of O&T.[4]

The Chief of Engineers in December 1941 was Maj. Gen. Eugene Reybold. He had been District Engineer at Memphis during the great floods of 1937 and his organization of the defenses of that area had won nationwide attention. In August 1940 he came to Washington as G–4 of the General Staff. A little more than a year later, upon Schley's retirement, he was appointed Chief of Engineers.

The administrative arrangements which OCE adopted in December 1941 were designed to insure a balance between troop and construction activities. The construction program reached its peak in July 1942 when the value of work placed amounted to $720,000,000, and although it continued to be large throughout that year, it had receded by the fall to the point where some personnel could be spared for duties connected with the procurement of troop equipment. Thereafter, the Engineers found it possible to focus more and more upon troop activities.

Over the same twelve-month period the number of engineer troops in the Army more than trebled from 93,109 to 333,209. In December 1941 the Engineers composed 5.5 percent of the Army; a year later they composed 6.2 percent. Of the technical services only the Medical Department with a strength of 469,981 was larger than the Corps of Engineers at the end of 1942. The Quartermaster Corps, with a strength of 327,794, was next in size. While the $650,623,000 worth of procurement deliveries to the Engineers during 1942 was trifling compared to the $6,815,541,000 of deliveries to the Ordnance Department and the $4,322,954,000 to the Quartermaster Corps, it was well above amounts delivered to the five other services. The striking fact about the job the Engineers had to accomplish was its many-sidedness. The five and a half billion dollars' worth of construction completed by the Engineers in 1942 was exceeded only by the Ordnance Department's total procurement program. The Medical Department had more troops than the Corps of Engineers but procured less than a fourth as much equipment, while the Ordnance Department with its huge procurement program had roughly 100,000 fewer troops. Even if the construction pro-

[4] Orgn Charts OCE, 1942. EHD files.

gram were left out of the picture, only the task of the Quartermaster Corps with its large procurement program and its substantial number of troops paralleled that of the Engineers.

Except for minor changes in the lower echelons, the administrative relationships established in OCE in December 1941 remained in effect for the next two years. Not so the relationships of the Corps of Engineers to higher echelons in the War Department. The reorganization of the Army which took place on 9 March 1942 brought about a drastic change in the chain of command through which the Chief of Engineers formerly had direct access to the General Staff and to the Under Secretary of War. Only in civil works matters did the position of the Chief of Engineers remain the same, and civil works were not, during wartime, important.

A reorganization of the Army was overdue. General Headquarters, which had been set up on the basis of World War I experience to assume control of combat operations overseas, lacked the power to cope with the very different situation which developed in 1940–41. Army aviation, half inside, half outside the control of GHQ, demanded complete independence to prepare for a unique mission. The supply system was particularly cumbersome. Requirements were established by the chiefs of arms and services under the supervision of G–4 of the General Staff, procured under the supervision of the Office of the Under Secretary of War, and distributed under the supervision of G–4. In an emergency, operations invariably take precedence over planning. In the absence of an agency to direct and co-ordinate the supply functions of the various arms and services, G–4 became to a large extent an operating staff. The same thing happened to G–1, G–2, and G–3. Some means of relieving the General Staff of operations duties and restoring its original function as a planning group seemed imperative.[5]

The means finally used to create a more efficient organization divided the Army into three commands: Army Ground Forces, Army Air Forces, and the Services of Supply. The Corps of Engineers emerged from the shuffle a supply service instead of an arm, under the Commanding General, Services of Supply. To be sure, the Corps of Engineers, unlike the arms that were absorbed by Army Ground Forces, retained its Chief and its traditional administrative organization, a fact that compensated somewhat for the feeling of lowered prestige which accompanied this designation as a supply service. If the supply function had ever been regarded with respect in the Army, it had lost all claim to it during the twenty-year financial famine following World War I. To most officers the word "supply" evoked a vision of banishment to a depot to count pants and beans. It was only the very farsighted who could grasp the role that logistics was to play in World War II. Lt. Gen. Brehon B. Somervell, the commanding general of the newly created Services of Supply (SOS), himself an Engineer officer, was one of them. In his recognition of the importance of the logistical task ahead, he perhaps overlooked the fact that some of the members of his own Corps had not caught up with him.

[5] (1) Greenfield, Palmer, and Wiley, *Organization of Ground Combat Troops,* pp. 128–55, 203. (2) Millett, *Organization and Role of ASF,* Chs. I, II. (3) Henry L. Stimson and McGeorge Bundy, *On Active Service in Peace and War* (New York: Harper & Brothers, 1948), pp. 449–50. (4) Control Div ASF, Statistical Review, World War II: A Summary of ASF Activities [1945]. (Hereafter cited as ASF Stat Review.) EHD files.

After the creation of the Services of Supply, the Corps of Engineers no longer had direct contact with the General Staff or with the Under Secretary of War. All business with these offices had to go through the Commanding General, SOS. The changed relationship with the Under Secretary lost its sting in the course of the reorganization itself, since most of the functions of his office passed to Headquarters, SOS. Severing direct connections with the General Staff was another matter. Up to this time the Engineers had been able to trade upon their congenial relations with the General Staff in such matters as opposing cuts in Engineer strength in the infantry division. Just how far SOS would curtail this freedom was debatable in March 1942, but nothing was clearer than the fact that Somervell's organization had the power to do so.

General Reybold, the new Chief of Engineers, had seen while he was G–4 the inherent defects of the old organization. Besides, good soldiers take orders. His attitude was expressed in June 1942 in an exchange with Congressman Snyder of the House Committee on Appropriations:

Mr. Snyder: I believe your branch, under the recent reorganization falls under the "Services of Supply?"

General Reybold: Yes, sir.

Mr. Snyder: How do you find the new setup? So far as your branch is concerned, would you say that it is running smoothly and that you have found it to be an improvement over the former organization?

General Reybold: Yes, sir.[6]

Refinement of Prewar Troop Organizations

The tactical organization of the Army before Pearl Harbor was geared to the pattern of the European war. The Army was unprepared for the logistical and strategic demands of the global conflict that developed after the Japanese attack and only gradually realized what these demands would be. After the 1941 maneuvers the War Department had called for a reconsideration of unit organization, but, though they came in 1942, the modifications that were made as a result of this directive reflected earlier trends.[7]

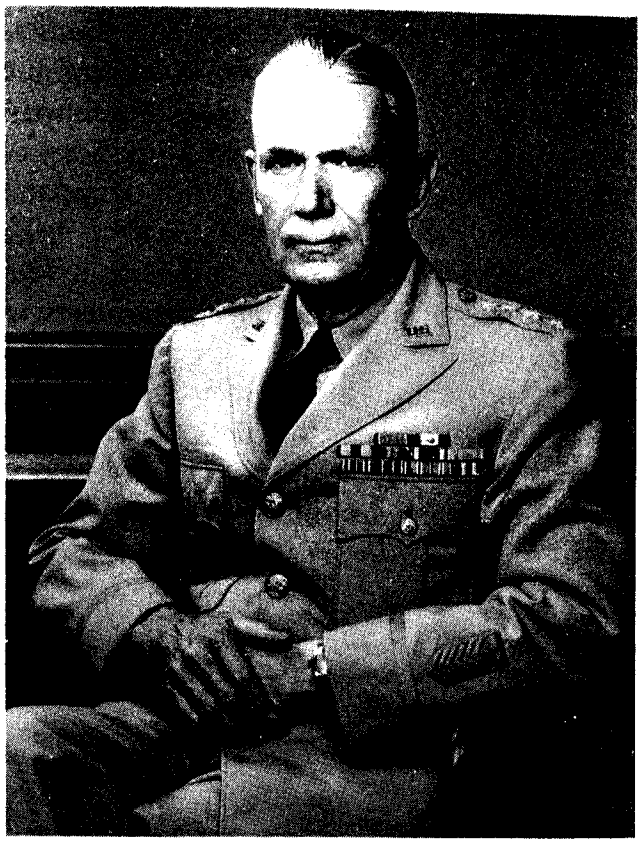
OCE's first concern, as it had been since 1937, was the adequacy of the combat battalion of the infantry division.The effort to make the engineers an integral part of the infantry–artillery combat team had succeeded almost too well. It became routine to assign one or two platoons of an engineer company to each of the division's three combat teams. Observers came away from the 1941 maneuvers convinced of the need for a corrective, noting that the few troops at the disposal of the division engineer left him inadequately prepared to carry out the general tasks that were certain to be demanded. The detachment of platoons from companies complicated messing and the distribution of equipment. Among the observers were Col. Joseph C. Mehaffey, who had been division engineer of the 1st Infantry Division, and Col. Raymond F. Fowler, then chief of O&T. Although both officers thought the engineer battalion too small, they saw little hope of enlarging it at that time. They proposed instead to redistribute its strength into four smaller companies of two platoons each instead of three companies of three platoons, the fourth

[6] H Comm on Appropriations, *Hearings on the Military Establishment Appropriations Bill, 1943,* 15 Jun 42, p. 212.

[7] Unless otherwise noted, the following discussion of combat and armored battalions is based upon correspondence in 320.2, Pt. 30; 320.2, Engrs Corps of, Pts. 14, 15; and 320.3.

company always to be at the call of the division engineer. The Engineer School showed little enthusiasm for this idea and in fact hung back when it came to endorsing the release of so many engineer troops from control of the division engineer. The school clung to traditional Engineer doctrine which held that combat engineers should usually be employed under unified control. Only when troops were on the march during an advance, a pursuit, or a withdrawal did the school favor attachment of engineers to a combat team. On the attack or on the defense they were to be employed under centralized control. The school opposed a reorganization within the existing strength of the combat battalion. A two-platoon company was less efficient than the existing three-platoon company because of the disproportionate overhead. The combat battalion did need four companies, but with three platoons each. Moreover, each platoon should be increased by eight to man newly assigned antitank weapons and machine guns, and there should be a slight addition to battalion headquarters personnel.

Early in January 1942, Sturdevant forwarded the school's recommendations to G–3, who rejected the 350-man increase but did allow 9 more officers and 102 more enlisted men. The battalion remained a three-company, three-platoon unit. The lettered companies received enough men for the new weapons and radios plus a few extra basics. The headquarters company gained motorboat operators, truck drivers, radio operators, basics, and a variety of specialists. The engineer combat battalion with its 745 men now composed 4.8 percent of the infantry division, a gain of .7 percent. G–3's generosity in this instance was typical. It reflected the trend toward



GENERAL BREHON B. SOMERVELL, *the commanding general of the Services of Supply. (Photograph taken 1945.)*

larger units which was one of three important characteristics of the 1942 reorganization. The trend was even more apparent in the treatment accorded the engineer battalion of the armored division.[8]

The commander of the engineer armored battalion, like the commander of the combat battalion, felt that he had too few men at his disposal. In September 1941 Oliver, the Armored Force Engineer, outlined the changes armored engineers considered necessary to increase their work

[8] (1) Schley, Maneuvers at Alexandria, La., May 40, Comments on Opns, Incl with Ltr, Actg CofEngrs to TAG, 12 Jun 40, sub: Rpt of Obsvs on Spring Maneuvers. 354.2. (2) EFM 5–6, 23 Apr 43, pp. 229–42. (3) T/Os 5–16, 5–17, 1 Apr 42.

power. The most radical was the elimination of the bridge company as an organic part of the battalion, and the attachment of such companies to armored divisions as needed. "The inclusion of this company in the battalion is believed to have been a step in the right direction in that it recognized the need for armored engineers to have bridge equipment with them at all times, not back at the rear . . . available on call with considerable delay," he wrote. In combat, bridges would often have to remain in place and the armored battalion might be left without this vital support if the equipment of only one company could be drawn upon. During the training period, one bridge company should be attached to each armored division. Overseas the number of bridge companies attached should depend upon the tactical situation. Flexibility was the characteristic most desired. With the elimination of the bridge company as an assigned unit, Oliver argued, the engineer armored battalion could absorb another lettered company, and all four companies be composed of three rather than two platoons. The battalion commander would then have sufficient men to perform unforeseen tasks. The argument had more pertinence for armored than for infantry engineers. The armored division was expected to spread out over a larger area. Because of this dispersion engineers would have to be attached to combat teams or commands and could not be readily assembled as a unit.[9] Recognition of this fact enabled armored engineers to gain readier acceptance for their recommendations than did the proponents of more engineers in the infantry division. When the new T/O for the armored battalion was approved in March 1942 the number of lettered companies was raised to four, platoons per company to three, and antitank weapons were provided. The bridge company was retained as an assigned unit until enough of these units had been organized to make attachment practicable. Under this temporary arrangement, the battalion had a strength of 1,174 officers and men or about 8 percent of the division.[10]

The second major characteristic of the reorganization of 1942—the first being the trend toward larger units—was simplification of the organization of general units.[11] At the close of First Army maneuvers in 1941 Adcock had commented:

> I think the time has come to reconsider the necessity for so many types of general engineer units. The combat battalion, armored battalion, and squadron meet a specific need in their particular divisions. There appears to be no sound reason for the remaining three general engineer units (combat regiment, general service regiment, and separate battalion) to continue under separate tables of organization with different types of equipment. They should be *just* Engineer regiments.[12]

Although this was Kingman's view also, the goal was easier to agree upon than to attain. Fowler argued that placing all engineer troops in the same type of regiment would be difficult because of the disparity in numbers of specialists available for white and Negro units. Agreeing to the principle of simplification but advocating a different approach, the Engineer School suggested

[9] Col. Lunsford E. Oliver, "Engineers With the Armored Force," *The Military Engineer,* XXXIII (September, 1941), 397–401.

[10] T/O 5–215, 1 Mar 42.

[11] The main body of correspondence on this simplification is in: (1) 320.2, Pts. 30, 31; 320.2, Engrs Corps of, Pt. 15; (2) AGF 321, Engrs Binder 2, Case 268, and Binder 1, Case 54 (S).

[12] Ltr, Adcock to CofEngrs, 25 Nov 41, sub: First Army vs. IV Army Corps Maneuvers (1st Phase). 354.2, Pt. 11.

that all combat and most general engineer units be organized with type squads, platoons, and companies, and that the two combat regiments per type corps be replaced by four combat battalions. Corps combat battalions would be similar to divisional combat battalions. With such units, employment would be more flexible and control no more difficult.[13] Once again Fowler objected. What advantage lay in type squads and platoons if equipment was to vary? "We should not overlook the fact," he cautioned, "that an Engineer squadron, an armored battalion, a corps regiment, and a general service regiment have very different primary functions. There are far better reasons for having a single type truck in the Army." [14] Should combat regiments be broken down to form battalions the corps engineer would have to deal with four commanders instead of two and suitable commands for Engineer colonels would vanish. Since there would also be an increase in strength, the General Staff was not likely to approve the change anyway.

Sturdevant took still another tack. The constant threat from armor and planes had made an extended protection of flanks and rear necessary so that engineers in the field army were required in greater depth than previously. General service regiments and combat regiments were very nearly alike and had been used interchangeably in maneuvers but general service regiments had been handicapped by their smaller number of vehicles. The combat regiment should replace the general service regiment in the field army; the general service regiment should be held in GHQ reserve for assignment to the communications zone. In March 1942 Sturdevant's plan was disapproved, partly because it would have involved the activation of more combat regiments. By this time the War Department had become more economical of motor vehicles than of manpower and was furthermore reluctant to take a step which so changed the concept of the engineer task in the field army—the use of combat troops for general construction. Under the new T/O which went into effect in the spring of 1942 the general service regiment gained only a few men. The combat regiment gained almost 150, most of its new-found strength resulting from the reorganization of its six companies in the same fashion as those in the combat battalion. At the same time some of the combat regiment's construction machinery was eliminated.[15]

The attempt to cut down the types of engineer units continued. In January 1942, Sturdevant suggested the conversion of separate battalions into general service regiments. The need for so large a concentration of common laborers in a separate battalion had disappeared. The plan for all separate battalions to be Negro was a discrimination the War Department wished to avoid. Separate battalions were cumbersome and ineffective; conversion would boost efficiency and morale. While laborers could not be converted into skilled workmen overnight merely by changing their name, they could be developed gradually within the regimental setup. Although Sturdevant did not wish to press the point until the question of substituting combat for general service regiments in the type army had been settled, by May he was ready to carry the fight to AGF.

[13] Rpt on Reorgn of T/O for Engr Bn Triangular Div, Incl with 1st Ind, Comdt Engr Sch to CofEngrs, 9 Dec 41, on Ltr, C of O&T Br to Comdt Engr Sch, 28 Nov 41. 320.3.

[14] Comments on School's Rpt, 10 Dec 41, by C of O&T Br. 320.2, Pt. 30.

[15] (1) T/Os 5–21, 5–171, 1 Nov 40. (2) T/Os 5–21, 5–171, 1 Apr 42.

On receiving Sturdevant's recommendation, the AGF Operations Division accused the Engineers of devious plotting to motorize the engineer separate battalion and increase its technician and NCO grades. The Requirements Division joined in opposing the plan. The Training Division, on the other hand, could discern "no ulterior motive seeking to motorize the Separate Battalion by indirection," and supported the Engineers.[16] G–4 of AGF was inclined to side with the Training Division but feared the additional equipment could not be supplied, much less shipped. G–4 remained convinced that common laborers equipped with picks and shovels would be in demand overseas. G–4's views prevailed, but the Engineers did not give up. In July 1942 they seized the opportunity to cite a cable from MacArthur's headquarters which stated that the separate battalion had too few officers and not enough machinery to be of much use. Everyone, including the General Staff, now concurred, but actual conversion would have to be delayed until additional officers became available some time after the first of the year.[17]

Aviation engineers had bridled somewhat under Kingman's insistence that the company in the engineer aviation regiment and in the engineer aviation battalion be organized in the same way as the combat company. At the beginning of 1942 the Engineer Section of the Air Force Combat Command prepared new T/O's which broke away from this concept, allowing higher grades as well as sufficient personnel for working in shifts. The new tables, furthermore, approved in April, also eliminated the separate engineer aviation company as too small for wartime service. Henceforth there was to be no distinction between the separate engineer aviation battalion and the battalion in the regiment; there was to be but one engineer aviation battalion patterned on the prewar separate engineer aviation battalion. To permit two- and three-shift operation of construction machinery substantial increases in the personnel of battalion headquarters were allowed. Lettered companies remained about the same size as the pre-Pearl Harbor combat companies, but they had more and heavier power equipment and were specifically designed for the primary mission of aviation engineers—constructing airfields. The basic engineer aviation unit was to be this battalion of 27 officers and 761 men.[18]

The third major characteristic of the 1942 reorganization was the perfection of the organization of special units. Aside from ponton and topographic units, special units had been slighted until relatively late in the defense period, when they were organized experimentally and whenever possible subjected to tests in maneuvers. This experience, together with new developments in equipment, enabled the Engineers to make firm recommendations.

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[16] M/S, Tng Div AGF to Rqmts and Opns Divs AGF, 11 May 42, sub: Elimination of Engr Sep Bns. AGF 321, Engrs Binder 2, Case 268.

[17] (1) 1st Ind, Hq AGF to CofEngrs, 23 May 42, on Memo, ACofEngrs for CG AGF, 2 May 42, sub: Elimination of Engr Sep Bns. 320.2, Engrs Corps of (S). (2) Memo, Hq AGF for ACofS G–3 WDGS, 19 Aug 42, same sub. Mob Br P&T Div file, Sep Bns–Reorgn (S). (3) Memo, ACofS G–3 WDGS for CGs AGF and SOS, 31 Aug 42, same sub. Same file.

[18] (1) Personal Ltr, Col Rudolph E. Smyser to EHD, 5 Jun 52. (2) Ltr, Smyser to Maj Gen A. C. Smith, 24 Dec 53. EHD files. (3) Ltr, CofS Hq AFCC to Chief of AAF, 2 Mar 42, sub: Rev T/Os for Avn Engr Units. AG 320.3 (10–3–41) (2), Sec. 5, Bulky. (4) Brig. Gen. Stuart C. Godfrey, "Engineers With the Army Air Forces," *Aviation Engineer Notes*, No. 11 (January, 1943), 34, USAF HD, 144.31A, Jan 43. (5) T/Os 5–415, 5–416, 1 Apr 42.

Heavy ponton battalions and light ponton companies had been among the first special units to be formed, but by the end of 1941 improvements in equipment as well as changes in responsibilities made revisions in organization desirable. Comparison of the poor performance of general engineer troops with the excellent showing made by ponton troops at the 1941 maneuvers clinched the running argument as to which type of unit should have the primary responsibility for building ponton bridges. In December, the Engineer School recommended that ponton units build as well as transport and maintain the bridges. The proposal soon became official doctrine. General engineer troops were to assist the ponton units as necessary.

The only change sought in the organization of the heavy ponton battalion was the inclusion of a light equipment platoon in battalion headquarters for the new ferrying equipment. The Engineers considered a greater increase in men and equipment essential for the light ponton company because the adoption of heavier tanks necessitated more 10-ton bridging material for the same length span. The Engineer School suggested the formation of a light ponton battalion similar to the heavy ponton battalion, with a headquarters company, including a light equipment platoon, and two bridge companies. Each bridge company was to carry two units of 10-ton equipage, as compared to the three units carried by the previous company. The battalion would therefore have only one more unit (250 feet) of bridging than the old company. The school figured that four units would enable a division to make a deliberate crossing over a river three or four hundred feet wide, with a partial reserve of material whether or not the bridge was reinforced.

The slight change in the heavy ponton battalion met little opposition. The new T/O approved in April contained a 46-man increase, bringing the unit's total strength to 16 officers, 3 warrant officers, and 501 enlisted men. The shift from a light ponton company to a light ponton battalion was not granted, partly because of the added personnel required for a battalion headquarters. Moreover, the Engineer argument that fewer men with better equipment were able to do more work was so convincing that each company was given half the amount of new ferrying equipment that otherwise would have been supplied battalion headquarters, one unit of 10-ton bridging was withdrawn, and the company was reduced by two men. The April T/O for the light ponton company provided for 6 officers and 213 men.[19]

The Engineers had been able to defer activation of a water supply battalion until August 1941 because divisional and other general engineer units had their own water supply equipment. Portable water purification equipment had been developed by the Engineer Board in co-operation with industry to enable facilities to keep pace with troop movements. The water supply battalion was meant to supplement such facilities. It was provided with a much heavier mobile purification plant and with tank trucks for transporting water. A T/O for the battalion had been formulated in November 1940, well before the first unit was activated.

[19] (1) Rpt on Reorgn of T/Os for Gen and Special Engr Units, 11 Dec 41, Incl with 1st Ind, Comdt Engr Sch to CofEngrs, 12 Dec 41, on Memo, C of O&T Br for Comdt Engr Sch, 4 Dec 41, sub: Rev of T/Os. 320.2, Pt. 30. (2) Corresp in 320.2, Engrs Corps of, Pt. 15. (3) T/Os 5–87, 1 Aug 42; 5–275, 1 Apr 42. (4) See above, pp. 51–52.

In April 1942 a well-drilling section was added to battalion headquarters and a redistribution of personnel in the three lettered companies resulted in a 73-man increase.[20]

One new special unit was added to engineer troops at this time. In June 1941 the Chief of Engineers had included a forestry company among the units to be investigated by the Engineer Board and the board in turn employed E. E. Esgate, a forestry engineer, to study the matter. Esgate urged quick action. With extensive construction in a theater of operations a foregone conclusion, the demand for lumber would become insatiable, he believed. In the United States the logging and milling industry had introduced much laborsaving machinery. Men who knew the business were therefore relatively few and most of them were too old to serve in the Army. But OCE was not sufficiently impressed with the urgency of the need. It was not until June 1942 that two companies of 5 officers and 166 men each, divided into a headquarters platoon, a logging platoon, and a manufacturing platoon equipped with a portable sawmill were activated.[21]

None of the three major characteristics in the 1942 reorganization indicated a sharp break from pre-Pearl Harbor concepts of military organization. The tendency to increase the size of units had become apparent as soon as the Army began to receive more men. The goal of simplicity in organization had also been enunciated before Pearl Harbor and the perfection of the organization of special units was an objective which the Engineers had had in mind for a long time. The 1942 reorganization marked the culmination of prewar thought and was a final adjustment to a nebulous war.

The Influence of Logistics on Engineer Growth

The emphasis on combat troops that characterized prewar thought was apparent in the troop basis of January 1942, which lumped combat and service units together. Of the 3,600,000 men expected to be under arms by the end of the year, 384,000 were slated for GHQ reserve; 998,000 for the AAF and its services; 1,300,000 for divisions, corps, and field armies; and 232,000 for overseas garrisons and bases. Some 600,000 were to compose overhead, replacements in training, and harbor defense units. The Engineers were expected to organize 128 new ground units. Forty-seven were either divisional units or combat regiments, 12 were ponton units, and 30 were general service regiments or separate battalions which could be used either in the communications or the combat zone. There was no hint here of the great role service units were to play in the prosecution of a global war. Special engineer units were supposed to round out the organization of field armies. No clear-cut distinction had been made between units needed to support combat operations and those required for more extensive logistical support in the rear. Maintenance, depot, and dump

[20] (1) Thompson, *What You Should Know About the Army Engineers,* pp. 158–65. (2) T/O 5–65, 1 Nov 40. (3) T/O 5–65, 1 Apr 42.

For additional information on engineer water supply activities both in the United States and in the theaters of operations, see William J. Diamond, "Water is Life," *The Military Engineer,* XXXIX (March–June, August, October, 1947).

[21] (1) Corresp in 400.34, SP 335, Pt. 1. (2) Memo, AC of O&T Br for Opns Div SOS, 4 Apr 42, sub: T/Os—Engr Railway Shop Bn (Diesel). 320.2, Pt. 32. (3) DF, ACofS G–3 to TAG, 18 Apr. 42, sub: Engr T/Os. AG 320.3 (10–13–41) (2) Sec. 5, Bulky. (4) Hist of 800th Engr Forestry Co in United States and Africa, 13 Jun 42–13 Dec 43. AG ENCO 80–0.3 (13364).

ENGINEERS CONSTRUCTING THE PIONEER ROAD *through virgin forests, Alcan Highway, British Columbia, May 1942.*

truck companies, general service regiments, and separate battalions all had this dual function. Sturdevant's early efforts to rectify the situation by eliminating general service regiments from the army echelon had failed.[22]

Strategy soon altered this distribution. Except in the Philippines the first phase of the United States involvement in the war did not lead to a large-scale clash of ground troops with the enemy. This phase of the war was a defensive one in which the United States sought to preserve its lines of communication with its Allies and bases overseas. While the Navy protected these lines by sea the Army tried to improve communications by land and to establish military bases. The initial effort was thus logistical and spurred the growth of service units. The Engineers had to answer an early and persistent call for construction troops to circle the world with airfields, to build strategic roads in Canada and Alaska, China and Burma, and to provide shelter for troops and supplies everywhere.

It soon became clear that there were not enough engineers. In February 1942 the War Department decided to transfer the building of bases in Iran and Egypt from civilian contractors to engineer troops. Because general service regiments had neither the equipment nor the skills to take up

[22] (1) Memo, ACofS G–3 (G–3/6457–433) for CofEngrs, 15 Jan 42, sub: Mob and Tng Plan, Jan 42. 370.93, Mob Tng Ser. Nos. 50 to Folio 3. (2) For discussion of depot and maintenance units, see below, pp. 227–29.

where the contractors had left off, OCE designed a special service regiment about the same size as a general service regiment but containing more skilled workers who could operate the machinery used by the contractors. A total of nine special and general service regiments were added to the troop basis for this mission. About the same time the Engineers began to organize three more general service regiments to construct bases for the build-up in Britain. By April the plan to militarize construction in the Middle East was all but canceled. The shortage of shipping which was to become a dominating influence on the strategy of the war had for the first time intruded upon the operations of the Corps of Engineers. Instead of some 16,000 engineer troops embarking for Egypt and Iran, as first planned, only 1,100 were to go.[23]

While few of these regiments were used as intended, it was fortunate they had been organized. In April the War Department became more deeply involved in planning for the build-up of American forces in Britain and demands for engineer troops immediately rose by nearly 24,000 men, most of whom were destined for service units. On top of this came an addition of 30 aviation battalions to the troop basis—more than doubling earlier estimates of requirements.[24] The troop basis of July 1942 reflected the trend toward service units—a trend which was to continue throughout the war. (*Table 4*)

Substantial as was the increase in engineer service units in the troop basis of July 1942 it was still too small. A month after its publication Reybold was pleading for the transfer of six general service regiments from AGF to SOS control. All but one of the regiments originally destined for the Middle East had moved out on other missions. Civilian laborers for construction jobs already under way in the Caribbean, Greenland, and Alaska were becoming harder and harder to hire. Troops would no doubt have to finish these projects as well as man scores of others from start to finish.

TABLE 4—ENGINEER UNITS IN TROOP BASIS: JANUARY 1942 AND JULY 1942

Unit	January 1942	July 1942	Change
Aviation regiment	(a)	3	------
Combat regiment	18	32	+14
General service regiment	22	49	+27
Special service regiment	0	3	+3
Armored battalion	10	14	+4
Aviation battalion	(a)	54	------
Camouflage battalion	3	6	+3
Combat battalion	55	57	+2
Heavy ponton battalion	10	10	0
Motorized battalion	4	2	−2
Separate battalion	24	9	−15
Topographic battalion (GHQ)	2	2	0
Topographic battalion (Army)	4	6	+2
Water supply battalion	4	6	+2
Engineer squadron	2	2	0
Depot company	7	20	+13
Dump truck company	10	21	+11
Light ponton company	16	22	+6
Maintenance company	10	15	+5
Topographic company (Corps)	11	15	+4
Heavy equipment company	1	2	+1
Heavy shop company	1	6	+5

[a] No engineer aviation units included in Troop Basis of January 1942.

Source: (1) Trp Unit Basis for Mob and Tng, Jan 42. AGF 3674–58, Mob and Tng Plan, 1942 (C). (2) Incl, Trp Basis for Mob and Tng, 1942, with Ltr, AG 320.2 (7-3-42) MS-C-M, 18 Jul 42. 370.93 (C).

[23] (1) Corresp in 322, Engrs Corps of, Activation of Constr Units, Folder 1 (S). (2) Memo, C of O&T Br for CGs Engr Units for Militarization of Overseas Constr, 19 Mar 42. 322, Engrs Corps of, Activation of Constr Units, Folder 2 (S).

[24] (1) Memo, Deputy Dir Opns SOS for ACofS G-3, 23 May 42, sub: Rqmts of Sv Units Which Should Be Activated by 31 Dec 42. EHD files. (2) Ltr, C of Sup Div to CG SOS, 27 Apr 42, sub: Proc Program. 400.12, Pt. 1 (C).

AGF balked at the transfer. Units the size of a battalion or regiment should be trained with other soldiers for better teamwork in battle. AGF's demurrer had scarcely been received when Reybold boosted his request to twelve regiments. He got what he had asked for originally. At the end of October the General Staff transferred six regiments from AGF.[25]

Even as the Engineers were striving to satisfy the demand for standard service units, new and specialized functions were thrust into the foreground. Invading armies, seeking footholds on the continent of Europe and on the islands leading to the Japanese homeland, faced manifold amphibious landings to gain beachheads. A major landing, involving great numbers of troops and a sustained offensive inland, would require the full facilities of large seaports. Petroleum products in unheard-of amounts would be consumed. So new, so specialized were the units organized by the Engineers for amphibious operations, for the distribution of petroleum products, and for the rehabilitation of ports, that their stories will be told separately in Chapters XVI, XVIII, and XVII.[26]

The transition from a peace to a war footing had been completed by the end of 1942, but the adaptation of engineer units to the demands of global warfare remained to be made. In the first months after Pearl Harbor the mobilization of men and equipment took top priority. There had been little opportunity to reconsider the organizational and doctrinal pattern elaborated in peacetime. The first enemy blows had to be met within the existing military framework. The reorganization of 1942 was not designed to alter that basic pattern, but rather to round it out. Yet even before the reorganization had been completed, the Engineers began to feel the impact of strategic and logistic requirements. The demand for logistical units was to continue to grow in volume.

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[25] (1) Ltr, CofEngrs to CG SOS, 13 Aug 42, sub: Activation of Additional Gen Sv Regts. 320.2, ASFTC Camp Claiborne. (2) Min, Staff Conf SOS, 23 Sep 42, sub: Résumé of Matters Presented at Staff Conf, 22 Sep 42. 337, Staff Confs. (3) Corresp in AG 320.2 (8–13–42) (C).

[26] The specially equipped engineer airborne aviation battalion was also authorized in 1942. See below, p. 315.

The T/O for another engineer unit, the engineer airborne battalion of the airborne division, was issued in September 1942, following the War Department's decision to activate two airborne divisions. The T/O for the engineer airborne battalion called for 23 officers and 401 enlisted men organized into a headquarters company, a parachute company, and two glider companies. Five such units were eventually activated. (1) Greenfield, Palmer, and Wiley, *op. cit.*, pp. 93–98, 340–41. (2) T/O 5–255, 5 Sep 42.